THAT WHICH IS CLAIMED IS:

Sub A2

1 ~~38~~. A stably transformed duckweed plant comprising a heterologous nucleic acid of interest incorporated in its genome.

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2 ~~40~~. The stably transformed duckweed plant according to Claim 1 ~~38~~, wherein said duckweed plant comprises fewer than 5 copies of said heterologous nucleic acid of interest.

3 ~~41~~. The stably transformed duckweed plant according to Claim 1 ~~38~~, wherein said duckweed plant is selected from the group consisting of the genus *Spirodela*, genus *Wolffia*, genus *Wolfiella*, and genus *Lemna*.

4 ~~42~~. The stably transformed duckweed plant according to Claim 1 ~~38~~, wherein said duckweed plant is selected from the genus *Lemna*.

5 ~~43~~. The stably transformed duckweed plant according to Claim 1 ~~38~~, wherein said duckweed plant is selected from the group consisting of a species of *Lemna minor*, a species of *Lemna miniscula*, and a species of *Lemna gibba*.

6 ~~44~~. The stably transformed duckweed plant according to Claim 1 ~~38~~, wherein said nucleic acid comprises at least one expression cassette comprising a gene which confers resistance to a selection agent.

7 ~~45~~. The stably transformed duckweed plant according to Claim 6 ~~44~~, wherein said gene which confers resistance to a selection agent is selected from the group consisting of *neo*, *bar*, *pat*, *ALS*, *HPH*, *HYG*, *EPSP* and *Hml*.

8 ~~46~~. The stably transformed duckweed plant according to Claim 1 ~~38~~, wherein said nucleic acid comprises two genes of interest.

9 ~~47~~. The stably transformed duckweed plant according to Claim 1 ~~38~~, wherein said nucleic acid encodes a protein or peptide selected from the group consisting of

insulin, growth hormone, α-interferon, β-glucocerebrosidase, retinoblastoma protein, p53 protein, angiostatin, leptin, and serum albumin.

48. The stably transformed duckweed plant according to Claim 38, wherein said nucleic acid encodes at least one protein or peptide subunit of a multimeric protein selected from the group consisting of hemoglobin, collagen, P450 oxidase, and a monoclonal antibody.

61. The stably transformed duckweed plant according to Claim 38, wherein said nucleic acid encodes a secreted protein or peptide.

62. The stably transformed duckweed plant according to Claim 43, wherein said duckweed plant is from a species of *Lemna minor*.

63. A stably transformed duckweed plant tissue comprising a heterologous nucleic acid of interest incorporated in its genome.

64. The stably transformed duckweed plant tissue according to Claim 63, wherein said plant tissue is meristematic tissue.

65. The stably transformed duckweed plant tissue according to Claim 63, wherein said plant tissue is frond tissue.

66. The stably transformed duckweed plant tissue according to Claim 63, wherein said plant tissue is callus tissue.

67. The stably transformed duckweed plant tissue according to Claim 66, wherein said plant tissue is Type I callus tissue.

68. A duckweed tissue culture comprising the stably transformed duckweed plant tissue of Claim 63.

19
~~69~~. A stably transformed duckweed cell comprising a heterologous nucleic acid of interest incorporated in its genome.

20
~~70~~. A stably transformed duckweed plant comprising a chimeric nucleic acid of interest incorporated in its genome, wherein said chimeric nucleic acid comprises a coding sequence operably linked to a transcription initiation region that is heterologous to said coding sequence.

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21
~~71~~. The stably transformed duckweed plant according to Claim ~~70~~ 20, wherein said chimeric nucleic acid comprises a duckweed coding sequence operably linked to a transcription initiation region that is heterologous to said coding sequence.

22
~~72~~. The stably transformed duckweed plant accordingly to Claim ~~70~~ 20, wherein said chimeric nucleic acid is flanked by T-DNA border sequences.

23
~~73~~. The stably transformed duckweed plant according to Claim ~~70~~ 20, wherein said duckweed plant comprises fewer than 5 copies of said chimeric nucleic acid.

24
~~74~~. The stably transformed duckweed plant according to Claim ~~70~~ 20, wherein said duckweed plant is selected from the group consisting of the genus *Spirodela*, genus *Wolffia*, genus *Wolfiella*, and genus *Lemna*.

25
~~75~~. The stably transformed duckweed plant according to Claim ~~70~~ 20, wherein said duckweed plant is selected from the genus *Lemna*.

26
~~76~~. The stably transformed duckweed plant according to Claim ~~70~~ 20, wherein said duckweed plant is selected from the group consisting of a species of *Lemna minor*, a species of *Lemna miniscula*, and a species of *Lemna gibba*.

27
~~77~~. The stably transformed duckweed plant according to Claim ~~76~~ 1, wherein said chimeric nucleic acid of interest comprises at least one expression cassette comprising a gene which confers resistance to a selection agent.

28 ~~78~~. The stably transformed duckweed plant according to Claim 27 ~~77~~, wherein said gene which confers resistance to a selection agent is selected from the group consisting of *neo*, *bar*, *pat*, *ALS*, *HPH*, *HYG*, *EPSP* and *Hml*.

29 ~~79~~. The stably transformed duckweed plant according to Claim 20 ~~70~~, wherein said chimeric nucleic acid comprises two genes of interest.

30 ~~80~~. The stably transformed duckweed plant according to Claim 20 ~~70~~, wherein said chimeric nucleic acid encodes a protein or peptide selected from the group consisting of insulin, growth hormone, α-interferon, β-glucocerebrosidase, retinoblastoma protein, p53 protein, angiostatin, leptin, and serum albumin.

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31 ~~81~~. The stably transformed duckweed plant according to Claim 20 ~~70~~, wherein said chimeric nucleic acid encodes at least one protein or peptide subunit of a multimeric protein selected from the group consisting of hemoglobin, collagen, P450 oxidase, and a monoclonal antibody.

32 ~~82~~. The stably transformed duckweed plant according to Claim 20 ~~70~~, wherein said chimeric nucleic acid encodes a secreted protein or peptide.

33 ~~83~~. The stably transformed duckweed plant according to Claim 26 ~~76~~, wherein said duckweed plant is from a species of *Lemna minor*.

34 ~~84~~. A stably transformed duckweed plant tissue comprising a chimeric nucleic acid of interest incorporated in its genome, wherein said chimeric nucleic acid comprises a coding sequence operably linked to a transcription initiation region that is heterologous to said coding sequence.

35 ~~85~~. The stably transformed duckweed plant tissue according to Claim 34 ~~84~~, wherein said plant tissue is meristematic tissue.

36 ~~86~~. The stably transformed duckweed plant tissue according to Claim 34 ~~84~~, wherein said plant tissue is frond tissue.

~~87~~ 37. The stably transformed duckweed plant tissue according to Claim ~~84~~ 34, wherein said plant tissue is callus tissue.

~~88~~ 38. The stably transformed duckweed plant tissue according to Claim ~~87~~ 37, wherein said plant tissue is Type I callus tissue.

~~89~~ 39. A duckweed tissue culture comprising the stably transformed duckweed plant tissue of Claim ~~84~~ 34.

~~90~~ 40. A stably transformed duckweed cell comprising a chimeric nucleic acid of interest incorporated in its genome, wherein said chimeric nucleic acid comprises a coding sequence operably linked to a transcription initiation region that is heterologous to said coding sequence.

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